BRUHAT BANGALORE MAHANAGARA PALIKE

MEASUREMENT SHEET

RA 1ST AND FINAL BILL

Name of work: Improvements and Asphalting to Roads at Sapthagiri Layout and Surrounding areas in Ward No. 09 (Vidyaranyapura), Vidyaranyapura Sub Division.

Estimated Cost : Rs. 50.00 Lakhs

Head of Account : P-1771

Name of Agency: Sri Ninganagowda V Patil, # 57/7, Sri Krishna Nilaya, 2nd Main Road, Ganganagara layout, Ganganagara, RT Nagar (P), Banagalore - 32.

Work order No: BBMP/EE/BTP/WO/118/2019-20 Dated: 25.10.2019.

Measurements Recarded on :

SL. No	DESCRIPTIONS	NO	Length	Width 1	width 2	Average Width	Depth	Quntity	Unit / Rate in Rs.	Amount in Rs.
			meters	meters	meters	meters	meters			
1	Excavation for road, drains and similar works KSRRB 300-1. Earthwork excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5 m, excavated surface leveled and sides neatly dressed, the disposed earth to be leveled neatly after breaking of clods etc complete as per specifications and directions of engineer in charge of the work								Cum	
	Qty as per Premeasurement Recorded vide E-MB Page No. 1 & 2 is							**547.34**	224.13	**122675.00**
2	Removing and refixing stone slabs of drains and pointing in CM (1:3)								Sqm	
	Qty as per Premeasurement Recorded vide E-MB Page No. 3 & 4 is							**2774.79**	102.28	**283806.00**
3	Providing granite slabs of selected quality roughly dressed having a size of 7.5 cms thick and fixed in cement mortar (1:6) including fixing curing ete., complete								Sqm	
	Sapthagiri Layout 2nd Cross									
		1	10.00			1.35		13.50		
		1	8.00			1.35		10.80		
	Sapthagiri Layout 3rd Cross									
		1	15.00			1.35		20.25		
		1	11.00			1.35		14.85		
	Sapthagiri Layout 4th Cross									
		1	12.00			1.35		16.20		
		1	9.00			1.35		12.15		
	Sapthagiri Layout 3rd Cross W/S									
		1	25.00			1.35		33.75		
		1	20.00			1.35		27.00		
		1	25.00			1.35		33.75		
		1	20.00			1.35		27.00		
		1	16.00			1.35		21.60		
		1	25.00			1.35		33.75		
	Sapthagiri Layout 4th Cross W/S									
		1	25.00			1.35		33.75		
		1	28.00			1.35		37.80		
		1	20.00			1.35		27.00		
		1	22.00			1.35		29.70		
		1	29.00			1.35		39.15		
		1	20.00			1.35		27.00		
	Sapthagiri Layout 5th Cross									
		1	25.00			1.35		33.75		
		1	20.00			1.35		27.00		

519.75

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SL. No	DESCRIPTIONS	NO	Length	Width 1	width 2	Average Width	Depth	Quntity	Unit / Rate in Rs.	Amount in Rs.
			meters	meters	meters	meters	meters			
		1	18.00			1.35		24.30		
		1	16.00			1.35		21.60		
		1	12.00			1.35		16.20		
		1	19.00			1.35		25.65		
		1	22.00			1.35		29.70		
		1	16.00			1.35		21.60		
		1	15.00			1.35		20.25		
							Total Qty =	**679.05**		
							Qty Limited to =	**677.57**	681.90	**462035.00**
4	Providing and laying in position plain cement concrete of mix 1:4:8 with OPC cement @ 180kgs, with 40mm and down size graded granite metal coarse aggregates @0.85cum and fine aggregates @ 0.57cum machine mixed, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, including cost of all materials, labour, HOM of machinery, curing etc complete as per specifications and directions of engineer in charge of the work								Cum	
	Qty as per Premeasurement Recorded vide E-MB Page No. 5 is							**1.80**	4970.06	**8946.00**
5	Providing and constructing granite / trap / basalt size stone masonry in basement with cement mortar 1:6, edges of stones chistle dressed in courses not less than 15 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing complete as per specifications								Cum	
	Culvert @ 5th Cross Sapthagiri Layout									
		2	6.00			0.60	0.45	3.24		
		2	6.00			0.45	0.45	2.43		
							Total Qty =	**5.67**	5341.21	**30285.00**
6	Providing ruled pointing 20 mm deep to coursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications								Sqm	
	Culvert @ 5th Cross Sapthagiri Layout									
		2	6.00				0.90	10.80		
							Total Qty =	**10.80**	138.33	**1494.00**
7	Providing precast slab of 250mm thick including cost of all materials, labour, curing, transportation, loading unloading, etc.,complete as per the direction of engineer in charge - (Data rate Approved).								Sqm	
	Culvert @ 5th Cross Sapthagiri Layout									
		10	1.50			0.60		9.00		
							Total Qty =	**9.00**	4979.14	**44812.00**
8	Providing and constructing load bearing wall with solid concrete blocks of size 400x150x200 mm having block density not lessthan 1800 kg/m3 and having a minimum average compressive strength 5.00 N/mm2 confirming to IS 2185 (Part) : 2005 and constructed with CM 1:4 , as per IS 2572:2005 including cost of all materials, labour charegs, scaffolding, curing etc complete as per specifications and directions of engineer in charge of the work								Sqm	
	Bed Concrete									
	Sapthagiri Layout 2nd Cross									
		2	10.00			0.40		8.00		
		2	8.00			0.40		6.40		
	Sapthagiri Layout 3rd Cross									
		2	15.00			0.40		12.00		
		2	11.00			0.40		8.80		
	Sapthagiri Layout 4th Cross									
		2	12.00			0.40		9.60		
		2	9.00			0.40		7.20		
	Sapthagiri Layout 3rd Cross W/S									

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SL. No	DESCRIPTIONS	NO	Length	Width 1	width 2	Average Width	Depth	Quntity	Unit / Rate in Rs.	Amount in Rs.
			meters	meters	meters	meters	meters			
		2	25.00			0.40		20.00		
		2	20.00			0.40		16.00		
		2	25.00			0.40		20.00		
		2	20.00			0.40		16.00		
		2	16.00			0.40		12.80		
		2	25.00			0.40		20.00		
	Sapthagiri Layout 4th Cross W/S									
		2	25.00			0.40		20.00		
		2	28.00			0.40		22.40		
		2	20.00			0.40		16.00		
		2	22.00			0.40		17.60		
		2	29.00			0.40		23.20		
		2	20.00			0.40		16.00		
	Sapthagiri Layout 5th Cross									
		2	25.00			0.40		20.00		
		2	20.00			0.40		16.00		
		2	18.00			0.40		14.40		
		2	16.00			0.40		12.80		
		2	12.00			0.40		9.60		
		2	19.00			0.40		15.20		
		2	22.00			0.40		17.60		
		2	16.00			0.40		12.80		
		2	15.00			0.40		12.00		
							Total Qty =	**402.40**		
							Qty Limited to =	**400.00**	900.11	**360044.00**
9	Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.69 cum and fine aggregtes @ 0.459cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation, plinth and cills, ncluding cost of all materials, labour, HOM of machinery, curing etc complete as per specifications and directions of engineer in charge of the work								Cum	
	Bed Concrete									
	Sapthagiri Layout 2nd Cross									
		2	10.00			0.45	0.10	0.90		
		2	8.00			0.45	0.10	0.72		
	Sapthagiri Layout 3rd Cross									
		2	15.00			0.45	0.10	1.35		
		2	11.00			0.45	0.10	0.99		
	Sapthagiri Layout 4th Cross									
		2	12.00			0.45	0.10	1.08		
		2	9.00			0.45	0.10	0.81		
	Sapthagiri Layout 3rd Cross W/S									
		2	25.00			0.45	0.10	2.25		
		2	20.00			0.45	0.10	1.80		
		2	25.00			0.45	0.10	2.25		
	Sapthagiri Layout 4th Cross W/S									
		2	25.00			0.45	0.10	2.25		
		2	28.00			0.45	0.10	2.52		
		2	20.00			0.45	0.10	1.80		
	Sapthagiri Layout 5th Cross									
		2	25.00			0.45	0.10	2.25		
		2	20.00			0.45	0.10	1.80		
		2	18.00			0.45	0.10	1.62		
		2	16.00			0.45	0.10	1.44		
		2	12.00			0.45	0.10	1.08		

26.91

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SL. NO	DESCRIPTIONS	NO	Length meters	Width 1 meters	width 2 meters	Average Width meters	Depth meters	Quantity	Unit / Rate in Rs.	Amount in Rs.
		2	19.00			0.45	0.10	1.71		
		2	22.00			0.45	0.10	1.98		
		2	16.00			0.45	0.10	1.44		
	Coping Concrete									
	Sapthagiri Layout 2nd Cross									
		2x2	10.00			0.20	0.10	0.80		
		2x2	8.00			0.20	0.10	0.64		
	Sapthagiri Layout 3rd Cross									
		2x2	15.00			0.20	0.10	1.20		
		2x2	11.00			0.20	0.10	0.88		
	Sapthagiri Layout 4th Cross									
		2x2	12.00			0.20	0.10	0.96		
		2x2	9.00			0.20	0.10	0.72		
	Sapthagiri Layout 3rd Cross W/S									
		2x2	25.00			0.20	0.10	2.00		
		2x2	20.00			0.20	0.10	1.60		
		2x2	25.00			0.20	0.10	2.00		
		2x2	20.00			0.20	0.10	1.60		
		2x2	16.00			0.20	0.10	1.28		
		2x2	25.00							
	Sapthagiri Layout 4th Cross W/S									
		2x2	25.00			0.20	0.10	2.00		
		2x2	28.00			0.20	0.10	2.24		
		2x2	20.00			0.20	0.10	1.60		
		2x2	22.00			0.20	0.10	1.76		
		2x2	29.00			0.20	0.10	2.32		
		2x2	20.00			0.20	0.10	1.60		
	Sapthagiri Layout 5th Cross									
		2x2	25.00			0.20	0.10	2.00		
		2x2	20.00			0.20	0.10	1.60		
		2x2	18.00			0.20	0.10	1.44		
		2x2	16.00			0.20	0.10	1.28		
		2x2	12.00			0.20	0.10	0.96		
		2x2	19.00			0.20	0.10	1.52		
		2x2	22.00			0.20	0.10	1.76		
		2x2	16.00			0.20	0.10	1.28		
		2x2	15.00			0.20	0.10	1.20		
	Culvert	1	6.00			1.50	0.10	0.90		
		2	6.00			1.00	0.15	1.80		
							Total Qty =	**49.96**		
							Qty Limited to =	**49.70**	5281.79	**262505.00**
10	Providing granite slabs of selected quality roughly dressed having a size of 10 cms thick and fixed in cement mortar (1:6) including fixing curing ete., complete								Sqm	
	Bed Concrete									
	Sapthagiri Layout 2nd Cross									
		2	10.00			0.90		18.00		
		2	8.00			0.90		14.40		
	Sapthagiri Layout 3rd Cross									
		2	15.00			0.90		27.00		
		2	11.00			0.90		19.80		
	Sapthagiri Layout 4th Cross									
		2	12.00			0.90		21.60		
		2	9.00			0.90		16.20		
	Sapthagiri Layout 3rd Cross W/S									
		1	25.00			0.90		22.50		
		1	20.00			0.90		18.00		

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SL. No	DESCRIPTIONS	NO	Length	Width 1	width 2	Average Width	Depth	Quantity	Unit / Rate in Rs.	Amount in Rs.
			meters	meters	meters	meters	meters			
		1	25.00			0.90		22.50		
	Sapthagiri Layout 4th Cross W/S									
		1	25.00			0.90		22.50		
		1	28.00			0.90		25.20		
		1	20.00			0.90		18.00		
	Sapthagiri Layout 5th Cross									
		1	25.00			0.90		22.50		
		1	20.00			0.90		18.00		
		1	18.00			0.90		16.20		
		2	16.00			0.90		28.80		
		2	12.00			0.90		21.60		
		2	19.00			0.90		34.20		
		2	22.00			0.90		39.60		
		2	16.00			0.90		28.80		
			356.00							
							Total Qty =	**455.40**		
							Qty Limited to =	**450.00**	888.42	**399789.00**
11	Providing chamfering edges to stone slab 2.5 cms. wide as per specifications. (only chamfered length shall be recorded)								Sqm	
		421	3.00					1263.80		
							Qty Limited to =	**1250.00**	56.50	**70625.00**
12	Scarifying bituminous course 50mm to 75mm thick along with premix carpet / surface dressing by manual means without disturbing the base and stacking of the debris materials including cost of all labour charges etc complete as per specifications and directions of engineer in charge of the work.								Sqm	
	Qty as per Premeasurement Recorded vide E-MB Page No. 5 is							**1229.81**	87.67	**107817.00**
13	Wet Mix Macadam - Providing, laying, spreading and compacting crushed stone aggregates of granite / trap / basalt to wet mix macadam specifications including pre mixing the material with water at OMC in mechanical mix plant carriage of mixed method of tipper to site, laying in uniform layers with paver in sub-base/base course on well prepared surface and compacting with vibratory roller to achieve the desired density etc complete as per specifications and directions of engineer in charge of the work								Cum	
	Qty as per Premeasurement Recorded vide E-MB Page No. 6 is							**242.45**	1839.18	**445909.00**
14	Providing and applying primer coat with S.S. bitumen emulsion on prepared surface of granular base such as WMM including cleaning of road surface and spraying primer at the rate of 0.60 kg / sqm using mechanical means complete as per specifications.								Sqm	
	Qty as per Premeasurement Recorded vide E-MB Page No. 7 is							**1229.81**	33.12	**40731.00**
15	Providing and laying bituminous macadam on prepared surface with crushed coarse aggregates as per design mix formula for base / binding course including loading of aggregates with F.E. loader, hot mixing of stone aggregates and bitumen in hot mix plant, transporting the mixd material in tipper to paver and laying mixed materials with paver finisher to the required level and grade, rolling by power roller to achieve the desired density, but excluding cost of primer / tack coat including lead, lift and cost of all materials, labour, HOM of machineries complete as per specifications. MORTH /Chapter 5 - using 40/60 TPH capacity H.M.P. with Mechanical paver Gr-II (50 mm to 75 mm) with 3.3 % VG-30 Bitumen								Cum	
	Qty as per Premeasurement Recorded vide E-MB Page No. 8 is							**61.49**	5101.57	**313696.00**
16	Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatment including cost of all materials, labour, HOM of machineries etc complete as per specification								Sqm	

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SL. No	DESCRIPTIONS	NO	Length meters	Width 1 meters	width 2 meters	Average Width meters	Depth meters	Quntity	Unit / Rate in Rs.	Amount in Rs.
	Qty as per Premeasurement Recorded vide E-MB Page No. 9 is							**3513.75**	4.87	**17112.00**
17	Providing and applying tack coat using 80/100 grade bitumen(VG10) on the prepared black topped surfaces at 2.5 kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.								Sqm	
		Qty Vide Item No. 16						3513.75		
								3513.75	13.64	**47928.00**
18	Providing and laying bituminous concrete 40 mm thick with hot mix plant, using crushed aggregates of specified grading, premixed with bituminous binder and filler, transporting the hot mix to work site, laying with a paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 500.9 complete in all respects complete as per specifications. MORTH Specification No. 509 - using 40/60 TPH capacity H.M.P. with Mechanical Paver Gr-II (30 mm to 45 mm) with 6 % VG-30 Bitumen								Cum	
	Sapthagiri Layout 2nd Cross									
	Ch: 0.00 to 30.00	1	30.00	6.00	5.50	5.75	0.04	6.90		
	Ch: 30.00 to 51.80	1	21.80	5.50	6.00	5.75	0.04	5.01		
	Sapthagiri Layout 3rd Cross									
	Ch: 0.00 to 30.00	1	30.00	5.10	5.00	5.05	0.04	6.06		
	Ch: 30.00 to 48.00	1	18.00	5.00	5.20	5.10	0.04	3.67		
	Sapthagiri Layout 4th Cross									
	Ch: 0.00 to 30.00	1	30.00	6.00	4.60	5.30	0.04	6.36		
	Ch: 30.00 to 48.00	1	48.00	4.60	4.70	4.65	0.04	8.93		
	Sapthagiri Layout 3rd Cross W/S									
	Ch: 0.00 to 30.00	1	30.00	6.00	4.80	5.40	0.04	6.48		
	Ch: 30.00 to 60.00	1	30.00	4.80	4.50	4.65	0.04	5.58		
	Ch: 60.00 to 90.00	1	30.00	4.50	4.20	4.35	0.04	5.22		
	Ch: 90.00 to 120.00	1	30.00	4.20	4.20	4.20	0.04	5.04		
	Ch: 120.00 to 150.00	1	30.00	4.20	4.00	4.10	0.04	4.92		
	Ch: 150.00 to 161.40	1	11.40	4.00	4.10	4.05	0.04	1.85		
	Sapthagiri Layout 4th Cross W/S									
	Ch: 0.00 to 30.00	1	30.00	5.40	4.20	4.80	0.04	5.76		
	Ch: 30.00 to 60.00	1	30.00	4.20	4.40	4.30	0.04	5.16		
	Ch: 60.00 to 90.00	1	30.00	4.40	4.30	4.35	0.04	5.22		
	Ch: 90.00 to 120.00	1	30.00	4.30	4.20	4.25	0.04	5.10		
	Ch: 120.00 to 150.00	1	30.00	4.20	4.30	4.25	0.04	5.10		
	Ch: 150.00 to 153.60	1	3.60	4.30	4.30	4.30	0.04	0.62		
	Sapthagiri Layout 5th Cross									
	Ch: 0.00 to 30.00	1	30.00	5.90	4.10	5.00	0.04	6.00		
	Ch: 30.00 to 57.30	1	27.30	4.10	6.00	5.05	0.04	5.51		
	Ch: 0.00 to 30.00	1	30.00	5.00	5.30	5.15	0.04	6.18		
	Ch: 30.00 to 33.00	1	3.00	5.30	5.10	5.20	0.04	0.62		
	Ch: 0.00 to 30.00	1	30.00	3.80	5.30	4.55	0.04	5.46		
	Ch: 30.00 to 60.00	1	30.00	5.30	5.90	5.60	0.04	6.72		
	Ch: 60.00 to 90.00	1	30.00	5.90	4.90	5.40	0.04	6.48		
	Ch: 90.00 to 120.00	1	30.00	4.90	4.90	4.90	0.04	5.88		
	Ch: 120.00 to 140.00	1	20.00	4.90	5.00	4.95	0.04	3.96		
	Pot Hole Filling	1	3.00			4.00	0.04	0.48		
		1	3.20			2.80	0.04	0.36		
							Total Qty =	**140.64**		

Assistant Engineer 29/01/20

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SL. No	DESCRIPTIONS	NO	Length	Width 1	width 2	Average Width	Depth	Quntity	Unit / Rate in Rs.	Amount in Rs.
			meters	meters	meters	meters	meters			
						Qty Limited to =		140.55	7270.98	1021936.00
19	Road Marking with Hot Applied Thermoplastic Compound with Reflectrising Glass Beads on Bituminous Surface:- Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications								Cum	
	Sapthagiri Layout 2nd Cross									
	Ch: 0.00 to 30.00	2	30.00			0.10		6.00		
	Ch: 30.00 to 51.80	2	21.80			0.10		4.36		
	Sapthagiri Layout 3rd Cross									
	Ch: 0.00 to 30.00	2	30.00			0.10		6.00		
	Ch: 30.00 to 48.00	2	18.00			0.10		3.60		
	Sapthagiri Layout 4th Cross									
	Ch: 0.00 to 30.00	2	30.00			0.10		6.00		
	Ch: 30.00 to 48.00	2	48.00			0.10		9.60		
	Sapthagiri Layout 3rd Cross W/S									
	Ch: 0.00 to 30.00	2	30.00			0.10		6.00		
	Ch: 30.00 to 60.00	2	30.00			0.10		6.00		
	Ch: 60.00 to 90.00	2	30.00			0.10		6.00		
	Ch: 90.00 to 120.00	2	30.00			0.10		6.00		
	Ch: 120.00 to 150.00	2	30.00			0.10		6.00		
	Ch: 150.00 to 161.40	2	11.40			0.10		2.28		
	Sapthagiri Layout 4th Cross W/S									
	Ch: 0.00 to 30.00	2	30.00			0.10		6.00		
	Ch: 30.00 to 60.00	2	30.00			0.10		6.00		
	Ch: 60.00 to 90.00	2	30.00			0.10		6.00		
	Ch: 90.00 to 120.00	2	30.00			0.10		6.00		
	Ch: 120.00 to 150.00	2	30.00			0.10		6.00		
	Ch: 150.00 to 153.60	2	3.60			0.10		0.72		
	Sapthagiri Layout 5th Cross									
	Ch: 0.00 to 30.00	2	30.00			0.10		6.00		
	Ch: 30.00 to 57.30	2	27.30			0.10		5.46		
	Ch: 0.00 to 30.00	2	30.00			0.10		6.00		
	Ch: 30.00 to 33.00	2	3.00			0.10		0.60		
	Ch: 0.00 to 30.00	2	30.00			0.10		6.00		
	Ch: 30.00 to 60.00	2	30.00			0.10		6.00		
	Ch: 60.00 to 90.00	2	30.00			0.10		6.00		
	Ch: 90.00 to 120.00	2	30.00			0.10		6.00		
	Ch: 120.00 to 140.00	2	20.00			0.10		4.00		
							Total Qty =	144.62		
							Qty Limited to =	143.40	417.91	59928.00
							Sub Total			4102073.00
							GST @ 12%			492249.00
							Grand Total		=	4594322.00

Rupees Forty Five Lakh(s) Ninety Four Thousand Three Hundred Twenty Two Only

Assistant Engineer 29/01/20

Assistant Executive Engineer

Assistant Executive Engineer
Vidyaranyapura Sub Division
BBMP, Bangalore - 97